Small Business Innovation Research/Small Business Tech Transfer

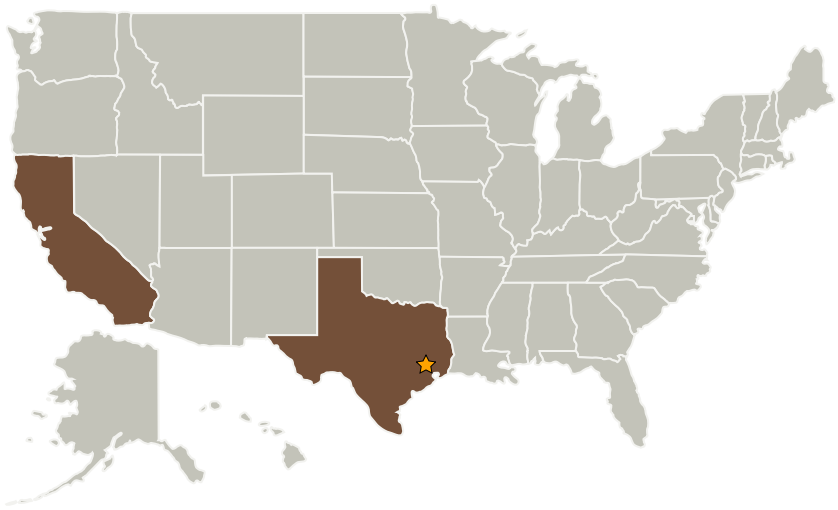
Nitrous Oxide Fuel Blend-Continuous Operation Lunar Thruster (NOFB-COLT), Phase II

Completed Technology Project (2009 - 2010)

Project Introduction

Firestar Engineering has developed a set of Nitrous Oxide Fuel Blend monopropellants that are: 1) Non-toxic, 2) Specific Impulse> 310 s, 3) Freezing point < -77 C, 4) Self Pressurizing, and 5) Highly throttleable. A monopropellant with these characteristics and with bipropellant performance has the power to revolutionize both private and government space initiatives. Applications which will benefit from these monopropellant blends are wide spread and system level studies have indicated competitive overall performance with everything except cryogenic bipropellants. Phase II efforts will concentrate on thruster development and monopropellant UN/DOT transportation classification. Thruster development will concentrate on a 25 lbf RCS thruster and performing a number of tests required for flight certification.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Johnson Space Center(JSC)	Lead Organization	NASA Center	Houston, Texas
Firestar Engineering, LLC	Supporting Organization	Industry	Mojave, California

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Johnson Space Center (JSC)

Responsible Program:

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Primary U.S. Work Locations	
California	Texas

Project Transitions

March 2009: Project Start

June 2010: Closed out

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX01 Propulsion Systems
  - TX01.1 Chemical Space Propulsion
    - TX01.1.5 Hybrids